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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,794	11/13/2003	Lawrence J. Karr	50037.0065USD5	4204
27488	7590	04/11/2007		
MERCHANT & GOULD (MICROSOFT)			EXAMINER	
P.O. BOX 2903			NGUYEN, DUC M	
MINNEAPOLIS, MN 55402-0903				
			ART UNIT	PAPER NUMBER
			2618	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/713,794	Applicant(s) KARR ET AL.	
	Examiner Duc M. Nguyen	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-39 and 44-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-39, 44-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to applicant's response filed on 1/29/07. Claims 34-39, 44-52 are now pending in the present application. **This action is made final.**

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **38-39** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Tzannes** (US 6,778,596) in view of **Hancharik** (US **5,949,822**).

Regarding claims **38**, **Tzannes** teaches a method of transmitting data, comprising:

- receiving a data stream including a plurality of data packets, wherein a first portion of data packets for transmission at a first latency, a second portion of data packets transmission at a second latency, wherein the second latency is lower than the first latency (see col. 6, lines 28-55, col. 10, lines 46-55);
- interleaving said first and second portions of data packets over a broadcast frame that includes subframes (see col. 10, line 46 – col. 11, 5).

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Here, when digital data and video data are transmitted in a superframe/frame, it is clear that the latency of digital data would be less than the latency of the video data. However, **Tzannes** is silent on a subframe for digital data. However, **Hancharik** discloses a method for communicating low latency data, wherein both low and high latency data are transmitted in subframes of a superframe (see col. 1, lines 54-61, col. 6, lines 41-60). Therefore, one skilled in the art would recognize that **Tzannes** would obviously, if not implicitly, teach subframes for digital data as well, thereby providing subframes for a second portion of data packets as claimed, in order to transmit both digital data and video data in a frame or superframe.

Therefore, the claimed limitations are made obvious by **Tzannes** and Hancharik.

Regarding claim **39**, the claim is rejected for the same reason as set forth in claim 38 above. In addition, although Tzannes and Hancharik fails to disclose the subframe is one-fourth of the broadcast frame, it is noted that Applicant has produced no evidence tending to show superior results because of his/her selection. Therefore, absent a showing to the contrary, it would have been obvious within one skilled in the art to provide such selected one-fourth.

3. Claims **34, 36** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Birru et al** (US 2003/0099303) in view of **Hancharik** (US 5,949,822).

Regarding claim **34**, **Birru** discloses a method of encoding a data stream (MPEG data), comprising the steps of:

partitioning said data stream into a plurality of data packets at a transmission network center (see Fig. 1, 3, wherein it is clear that a video stream would implicitly be partitioned into a plurality of MPEG packets from a video data source in order to prevent the network from being tied up due to large amount of data transmission). Note that a transmission network center is an inherent component in order to provide a video stream for television signals;

transmitting said data packets to a broadcast generator (see Fig. 3, which shows a broadcast generator for transmitting MPEG data packets);

receiving said transmitted data packets at said broadcast generator (see Fig. 3, noting for input data at the data randomizer 105);

writing said received data packets into an I/O memory of said broadcast generator (see Fig. 3, [0038] regarding the randomizer which would implicitly disclose an input memory for the randomizer in order to store the input data);

reading a plurality of extracted data packets from said I/O memory in an order that differs from the order in which said received data packets arrived at said I/O memory block (see Fig. 3, [0038] regarding the randomizer which would implicitly disclose an out memory for the randomizer in order to output the randomized data that has been reordered by the PRBS);

encoding said extracted data packets into a first portion and a second portion as claimed (see Fig. 3, [0038] regarding the **robust** bytes and **normal** byte). Note that since the robust bytes are interleaved to reduce its sensitivity to errors (see [0037]), it is clear that the latency of the robust packets would be higher than the latency of the

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normal packets, in the similar way as discussed by **Hancharik** (see col. 2, lines 40-51), and

interleaving said encoded data streams into a plurality of interleaved data segments (see Fig. 3 and [0039] regarding segments).

However, **Birru** is silent on a subframe for digital data. However, **Hancharik** discloses a method for communicating low latency data, wherein teaches a data structure format for a frame/superframe that both low and high latency data are transmitted in subframes of a frame/superframe (see Fig. 1A, col. 1, lines 54-61, col. 6, lines 41-60). Therefore, one skilled in the art would recognize that **Birru** would obviously, if not implicitly, teach subframes for digital data as well, thereby providing subframes for a second portion of data packets as claimed, in order to transmit both digital data and video data in a frame or superframe. Therefore, the claimed limitations are made obvious by **Birru** in view of **Hancharik**.

Regarding claim **36**, the claim is rejected for the same reason as set forth in claim **34** above. In addition, **Birru** in view of **Hancharik** would teach broadcast frame and subframes as claimed (see **Hancharik**, Fig. 1A).

4. Claims **44-45** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Tzannes** in view of **Hancharik** and further in view of **Birru**.

Regarding claim **44**, the claim is rejected for the same reason as set forth in claim **38** above. However, **Tzannes** fails to disclose an I/O memory for reading and

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writing the data packets in different orders. However, in an analogous art, **Birru** discloses a data randomizer for randomizing the input data in a substantially randomized patterns before input to an encoder (see **Fig. 3 and [0038]** regarding the randomizer which would implicitly disclose an input/output memory for the randomizer in order to perform the above randomized feature). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide the above teaching **Birru to Tzannes** for incorporating such data randomizer (or the claimed I/O memory) before the encoder as well, in order to prevent large amount of related information from arriving at the receiver in sequence during the channel fading condition.

Regarding claim **45**, the claim is rejected for the same reason as set forth in claim 44 above. In addition, since utilizing bit-exclusive-OR is known in the art, it would have been obvious to one skilled in the art at the time the invention was made to modify **Tzannes** for performing bit-exclusive-OR and convolution encoding as claimed, for utilizing advantages of Exclusive-OR operation such as mitigating interferences.

5. Claim **37, 47-51** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Birru** in view of **Hancharik** and further in view of **Chadwick (US 5,442,646)**.

Regarding claim **37**, the claim is rejected for the same reason as set forth in claim 34 above. In addition, since utilizing bit-exclusive-OR is well known in the art as disclosed by Chadwick (see col. 4, lines 45-68), it would have been obvious to one skilled in the art at the time the invention was made to modify **Birru** and Hancharik for

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performing bit-exclusive-OR and convolution encoding as claimed, for utilizing advantages of Exclusive-OR operation such as mitigating interferences (see Chadwick, col. 4, line 58- col. 5, line 6)

Regarding claims **47**, the claim is rejected for the same reason as set forth in claim 34 above. In addition, since utilizing FM subcarriers for signal modulation is well known in the art as disclosed by Chadwick, it would have been obvious to one skilled in the art at the time the invention was made to modify **Birru** and Hanccharik for utilizing FM subcarriers for signal modulation as well, for utilizing advantages of FM subcarrier such as high reliability signal propagation.

Regarding claim **48**, the claim is rejected for the same reason as set forth in claims 47 above. In addition, although **Birru** fails to disclose an I/O memory for the randomizer in that the memory outputs data upon the amount of data stored in the memory reaching a predetermined level, it is noted that maintaining the fill level of a buffer within a desired limit to minimize the risk of the buffer underflowing or overflowing is well known in the art (Official Notice). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to further modify **Birru**, **Hancharik** and **Chadwick** for filling the buffer memory of the data randomizer up to a threshold amount before initiating encoding the data as claimed, in order to minimize the risk of emptying the buffer (underflow condition).

Regarding claim **49**, **Birru** in view **Hancharik** would disclose the step of interleaving for low latency data (robust packets) in subframe as claimed (see Hancharik, Figs. 1A).

Regarding claim **50**, **Birru** in view of **Chadwick** would disclose the bit-exclusive-OR and convolution encoding for the same reason as set forth in claimed 37 above.

Regarding claim **51**, the claim is rejected for the same reason as set forth in claim 47 above. In addition, it would have been obvious to include a segment header for identification purpose as disclosed by **Birru** (see [0040] and [0073]-[0077]), in order for a receiver to decode and resemble received packets correctly.

6. Claim **35** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Birru** in view of **Hancharik** and further in view of **Bessette** (WO 95/22233).

Regarding claim **35**, the claim is rejected for the same reason as set forth in claim 34 above. In addition, although **Birru** fails to disclose an I/O memory for the randomizer in that the memory outputs data upon the amount of data stored in the I/O memory reaching a predetermined level, it is noted that maintaining the fill level of a buffer within desired limits to minimize the risk of the buffer underflowing or overflowing is well known in the art as disclosed by **Bessette** (see **Abstract**). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify **Birru** for filling the buffer memory of the data randomizer up to a threshold amount before initiating encoding the data as claimed, in order to minimize the risk of emptying the buffer (underflow condition). Note that starting output buffer data or initiating encoding output data is an equivalent event.

7. Claim **46** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Tzannes**

in view of **Hancharik** and further in view of **Chadwick**.

Regarding claim **46**, the claim is rejected for the same reason as set forth in claim 38 above. In addition, since utilizing FM subcarriers for signal modulation is well known in the art as disclosed by Chadwick, it would have been obvious to one skilled in the art at the time the invention was made to modify **Tzannes** for utilizing FM subcarriers for signal modulation as well, for utilizing advantages of FM subcarrier such as high reliability signal propagation.

8. Claim **52** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Birru** in view of **Hancharik** and **Chadwick** and further in view of **Misaizu** (US 5,487,089).

Regarding claim **52**, the claim is interpreted and rejected for the same reason as set forth in claim 47 above. In addition, since **Birru** as modified would disclose the subcarrier signal generator is further arranged to modulate data corresponding to the output data utilizing quadrature phase shift keying (see Chadwick, Fig. 2 regarding DQPSK modulator 130), and since the QPSK modulator that modulates data correspond to symbol by symbol under the transmit clock timing is known in the art as disclosed by **Misaizu** (see col. 8, lines 1-5 and col. 9, lines 1-15), the claimed limitation is made obvious by Chadwick and Misaizu, so that the symbol can be modulated and transmitted in a frame according to transmitting timeslots.

Response to Arguments

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9. Applicant's arguments with respect to claims 34-39, 44-52 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- See PTO-892.

12. **Any response to this final action should be mailed to:**
Box A.F.

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300 (for **formal** communications intended for entry)

(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window,
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner
should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893,
Monday-Thursday (9:00 AM - 5:00 PM).

Or to Matthew Anderson (Supervisor) whose telephone number is (571) 272-
4177.

Duc M. Nguyen, P.E.

Apr 2, 2007

A handwritten signature in black ink, appearing to read 'D. Nguyen', is written over the printed name 'Duc M. Nguyen, P.E.'.